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## PATENT COOPERATION TREATY

## PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT  
(PCT Article 36 and Rule 70)

REC'D 26 MAY 2005


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Applicant's or agent's file reference AMP 2058-PC		<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/EP 03/2364	International filing date (day/month/year) 06.11.2003	Priority date (day/month/year) 15.11.2002	
International Patent Classification (IPC) or both national classification and IPC H01H49/00			
Applicant TYCO ELECTRONICS AMP GMBH et al.			

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 5 sheets, including this cover sheet.
- ☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).
- These annexes consist of a total of 6 sheets.

3. This report contains indications relating to the following items:
- I ☒ Basis of the opinion
  - II ☐ Priority
  - III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
  - IV ☐ Lack of unity of invention
  - V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
  - VI ☐ Certain documents cited
  - VII ☐ Certain defects in the international application
  - VIII ☐ Certain observations on the international application

Date of submission of the demand  14.06.2004	Date of completion of this report  23.05.2005
Name and mailing address of the international preliminary examining authority:   European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer  Mäki-Mantila, M  Telephone No. +49 89 2399-7615



**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. **PCT/EP 03/12364**

**I. Basis of the report**

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

**Description, Pages**

1-10 as originally filed

**Claims, Numbers**

1-19 received on 09.02.2005 with letter of 09.02.2005

**Drawings, Sheets**

1/7-7/7 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
  - ☐ the language of publication of the international application (under Rule 48.3(b)).
  - ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).
3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:
- ☐ contained in the international application in written form.
  - ☐ filed together with the international application in computer readable form.
  - ☐ furnished subsequently to this Authority in written form.
  - ☐ furnished subsequently to this Authority in computer readable form.
  - ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
  - ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.
4. The amendments have resulted in the cancellation of:
- ☐ the description, pages:
  - ☐ the claims, Nos.:
  - ☐ the drawings, sheets:

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5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Yes: Claims	1-19
	No: Claims	
Inventive step (IS)	Yes: Claims	1-19
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-19
	No: Claims	

2. Citations and explanations

**see separate sheet**

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT - SEPARATE SHEET**

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**Re Item V**

**Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**1. Prior art**

Reference is made to the following documents:

D1: DE 31 42 890 A (EBERLE ANLAGEN KG) 19 May 1983 (1983-05-19)

D2: DE 197 19 357 C (SIEMENS AG) 22 October 1998 (1998-10-22)

**2. Novelty and inventive step**

**2.1 Independent claims**

**2.1.1 Claim 1**

The document D1 is regarded as being the closest prior art to the subject-matter of claim 1, and shows (the references in parentheses applying to this document):

a magnet system for a relay comprising a core (4) partially enclosed by a coil (3) and a yoke (6) having a first yoke leg attached to a first end of the core (4a) and a second yoke leg extending parallel to the core, the second yoke leg having an armature (7) mounting portion wherein:

the armature mounting portion is formed on an upper side of the second yoke leg (6) remote from the coil (see figure);

a pole (5) has a first pole leg connected to a second end of the core and a second pole leg extending parallel to the core, the second pole leg having an upper surface substantially aligned with the armature mounting portion such that when an armature (7) is mounted on the armature mounting portion, a working air gap is formed between a coil-side armature face and the upper surface of the pole leg.

The subject-matter of claim 1 differs from this known magnet system disclosed in D1 in that:

F1: the magnet system is extrusion coated with a plastics material

F2: the coil, the yoke, the pole and the contact carrier are embedded in the plastics material.

The subject-matter of claim 1 is therefore new (Article 33(2) PCT).

The problem to be solved by the present invention may be regarded as to achieve a strong fixing of the component parts of the magnet system when the shape of the parts do not match precisely.

**INTERNATIONAL PRELIMINARY  
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The solution to this problem proposed in claim 1 of the present application is considered as involving an inventive step (Article 33(3) PCT) for the following reasons:

Document D2 discloses (see page 3, lines 12-16) an electromagnetic relay with a basic body that may be fabricated by extrusion coating the coil. There is no indication in D2 that the fixed contact carrier, the yoke and the pole may be embedded in the plastics material.

For the person skilled in the art would not be obvious to combine the magnet system of D1 with the feature "extrusion coating" from D2 and to add also feature F2 in order to solved the problem.

In conclusion the subject matter of claim 1 involves an inventive step.

**2.1.2 Claims 10 and 18**

The same reasoning applies, mutatis mutandis, to the subject-matter of the corresponding independent claims 10 and 18, which therefore are also considered novel and inventive.

**2.2. Dependent claims**

Claims 2-9 are dependent on claim 1 and as such also meet the requirements of the PCT with respect to novelty and inventive step.

Claims 11-17 are dependent on claim 10 as such also meet the requirements of the PCT with respect to novelty and inventive step.

Claim 19 is dependent on claim 18 as such also meets the requirements of the PCT with respect to novelty and inventive step.

**3. Industrial applicability**

The invention according to claims 1-19 is industrially applicable, these claims therefore complying with Article 33(4) PCT.